FEBRUARY 20, 1938 NUMBER 326

THE UNIVERSITY OF NORTH CAROLINA RECORD

CATALOGUE OF THE SCHOOL OF MEDICINE

1937-1938

Announcements for the Session

1938-1939

THE UNIVERSITY OF NORTH CAROLINA PRESS
ISSUED 12 TIMES A YEAR AS FOLLOWS: 4 NUMBERS IN FEBRUARY, 3 NUMBERS IN MARCH, 3 NUMBERS IN APRIL, 1 NUMBER EACH IN JUNE AND OCTOBER.
ENTERED AS SECOND-CLASS MATTER AT THE POSTOFFICE AT
CHAPEL HILL, N. C.
UNDER THE ACT OF AUGUST 24, 1912

CATALOGUE OF EVENTS

SESSION, 1938-1939

1938

June 5-7	*Sunday through Tuesday.* Commencement Exercises.
June 13-July 23	Summer Session, First Term.
July 25-August 31	Summer Session, Second Term.
September 15	*Thursday.* Registration for the fall quarter.
September 16	*Friday.* Class work for the fall quarter and first semester begins.
October 12	*Wednesday.* University Day.
November 23	*Wednesday.* Thanksgiving Recess begins (1:00 p.m.).
November 28	*Monday.* Thanksgiving Recess ends (8:30 a.m.).
December 8-17	*Thursday to 1 p.m. Saturday of following week.* Registration for winter quarter.
December 13-17	*Tuesday through Saturday (1:00 p.m.)* Examinations for the fall quarter.
December 17 (afternoon)-January 1, 1939	Christmas Recess.

1939

January 3	*Tuesday.* Class work for the winter quarter begins.
January 25-30	*Wednesday through Monday.* Examinations for the first semester.
January 31	*Tuesday.* Registration for the second semester.
February 1	*Wednesday.* Class work for the second semester begins.
March 3-11	*Friday to 1:00 p.m. Saturday of following week.* Registration for the spring quarter.
March 7-11	*Tuesday through Saturday (1:00 p.m.).* Examinations for the winter quarter.
March 12-19	*Sunday through Sunday.* Spring Recess.
March 21	*Tuesday.* Class work for the spring quarter begins.
May 29-June 2	*Monday through Friday.* Examinations for the spring quarter and the second semester.
June 4-6	*Sunday through Tuesday.* Commencement Exercises.

INFORMATION PERTAINING TO THE GENERAL UNIVERSITY

The School of Medicine is one of the divisions of the University of North Carolina, located at Chapel Hill. It is governed by the same administration, the same board of trustees, the same laws and regulations as the rest of the university.

The pre-medical record of each applicant for admission must be passed upon and approved by the Dean of Admissions of the University before the application can be taken under consideration by the Dean and the Committee on Admissions of the Medical School.

STUDENT GOVERNMENT

The student body of the University is self-governing. The functions of this government are both disciplinary and constructive. These functions are exercised by the Student Council which is elected by the student body. The Medical School is represented on this council by a member of the second-year class. Student government, in so far as it is disciplinary, is based upon the honor principle. No code of rules is laid down to direct a student what to do and what not to do. The only standards are those of morality and gentlemanly conduct, and obedience to the laws of North Carolina. The Student Council has power to suspend or dismiss a student from the university, but the final and supreme power is in the general university faculty, delegated to it by the Board of Trustees.

WITHDRAWALS

Formal withdrawal, which is prerequisite to honorable dismissal or reëntrance to this institution, must be approved by the student's Dean to be valid. Such a withdrawal will be approved only after full investigation of the circumstances and after the lapse of twenty-four hours from the time the first application is filed with the Dean. The withdrawal form after approval by the Dean must be filed promptly with the Recorder in room 207, the South Building.

If a student withdraws after the mid-term and is reported as below passing in two or more courses, that quarter will be counted as a quarter in residence in all computations of his requirements for readmission. If a student withdraws before mid-term, it will be left to the discretion of the Dean as to whether or not that quarter is to be counted as a quarter in residence. The Dean's verdict will be indicated specifically on the form used for withdrawal.

HEALTH AND RECREATION

The health of the student community is cared for by the maintenance of a properly appointed infirmary with a staff of well trained physicians and nurses. The university gymnasium and five large athletic fields provide ample facilities for exercise and recreation, all under the supervision and direction of a well organized Department of Physical Education.

LIBRARIES

In addition to the specialized departmental and school libraries the general university library, containing over three hundred and fifty thousand volumes, offers its opportunities to members of all divisions of the institution.

LOCATION

Chapel Hill is thirty miles west of Raleigh, the capital of the State, in the beautiful Piedmont section of hills and forests, and is entered from every point by paved roads. Its environment of natural beauty and simple culture, of age and traditions, is impressive. The University of North Carolina, the first state university to open its doors in America and a member of the Association of American Universities, is recognized as a leader among educational institutions.

THE SCHOOL OF MEDICINE

Frank Porter Graham, M.A., LL.D., D.C.L., D.Litt., *President*
Robert Burton House, A.M., *Dean of Administration*
William deBerniere MacNider, M.D., Sc.D., LL.D., *Dean*
Walter Reece Berryhill, A.B., M.D., *Assistant Dean*
Milton Joseph Rosenau, A.M., M.D., *Director, Division of Public Health*

*THE ADMINISTRATIVE BOARD

Isaac Hall Manning, M.D.
Charles Staples Mangum, A.B., M.D.
Walter Reece Berryhill, A.B., M.D.
James Bell Bullitt, A.M., M.D.
Daniel Allan MacPherson, ScM., PhD.
Milton Joseph Rosenau, A.M., M.D.
Wesley Critz George, Ph.D.
English Bagby, Ph.D.
Robert Ervin Coker, Ph.D.
Herman Glenn Baity, Sc.D.
Edward Mack, Jr., Ph.D.

STANDING FACULTY COMMITTEES

Committee on Admission and Promotion:
Walter Reece Berryhill, A.B., M.D., *Chairman*
James Bell Bullitt, A.M., M.D.
Wesley Critz George, Ph.D.
Grant Lester Donnelly, A.B. in Educ., M.D.

Library Committee:
Wesley Critz George, Ph.D., *Chairman*
H. Ward Ferrill, A.B., Ph.D.
Walter Reece Berryhill, A.B., M.D.

SPECIAL STAFF

Charles Staples Mangum, A.B., M.D., *Professor of Anatomy*
Isaac Hall Manning, M.D., *Professor of Physiology*
William deBerniere MacNider, M.D., Sc.D., LL.D., *Kenan Research Professor of Pharmacology*
James Bell Bullitt, A.M., M.D., *Professor of Pathology*
Wesley Critz George, Ph.D., *Professor of Histology and Embryology*
Daniel Allan MacPherson, Sc.M., Ph.D., *Professor of Bacteriology*
Milton Joseph Rosenau, A.M., M.D., *Director, Division of Public Health*
James Clarence Andrews, B.S., Ph.D., *Professor of Biological Chemistry*
Grant Lester Donnelly, A.B. in Educ., M.D., *Associate Professor of Pharmacology*
Walter Reece Berryhill, A.B., M.D., *Associate Professor of Medicine*
H. Ward Ferrill, A.B., Ph.D., *Associate Professor of Physiology*
Russell Lowell Holman, A.B., M.D., *Assistant Professor of Pathology*
Robert Alexander Ross, M.D., *Lecturer in Obstetrics*
Thomas Henderson Byrnes, B.S., M.D., *Instructor in Pathology*
Edward McGowan Hedgpeth, A.B., M.D., *Instructor in Principles of Surgery*
Granvil C. Kyker, B.S., *Instructor in Biochemistry*
Frank Norman Low, Ph.D., *Instructor in Anatomy*
Warner Smith Hammond, Ph.D., *Instructor in Anatomy*
William Gardner Morgan, A.B., M.D., *Instructor in Physical Diagnosis*
Bernard John Schaaf, *Technical Assistant in Bacteriology*
John Gilmer Mebane, A.B., *Student Research Assistant in Pathology*
Meyer H. Rolnick, A.B., M.S., *Student Assistant in Bacteriology*
Thomas Worth Crowell, A.B., *Student Assistant in Biochemistry*
Fred Richard Cochrane, *Technical Assistant in Pharmacology*
Miss Mittie Pickard, *Technician in Pathology*
Mrs. Martin S. Shockley, A.B., *Technician in Anatomy*
Woodrow Wilson Jervis, *Technical Assistant in Physiology*

*The Dean of Administration, the Registrar, and the Dean of Students are **ex officio** members of each Administrative Board.

GENERAL STATEMENT

The School of Medicine was established in 1879 under the direction of Dr. Thomas W. Harris. A course in theoretical and practical medicine was offered under the preceptorial system, but the plan was found impracticable and was abandoned in 1886. In 1890, a more orderly and logical arrangement of the subjects in the medical course having developed, it became possible for an institution without clinical facilities to offer instruction in the pre-clinical subjects, and the school was reopened with Dr. Richard H. Whitehead as Dean and Professor of Anatomy. Under his guidance it soon won recognition for thoroughness of instruction and excellence in scholarship and has since continued without interruption to its growth. At first the course covered only one year, but in 1896, the medical course having been extended in the better class of schools to four years, a two-year course was inaugurated. In 1900 the School of Medicine was incorporated as in integral part of the University and was reorganized to meet the requirements of the first two years of the full four-year course leading to the degree of Doctor of Medicine. In 1902 it was expanded into a four-year school, and the clinical subjects of the third and fourth years were offered in Raleigh under the direction of Dr. Hubert A. Royster as Dean. After a few years of successful operation, this plan had to be abandoned for lack of financial support, and the clinical subjects were dropped. In 1908 the school was admitted to membership in the Association of American Medical Colleges, and is ranked in the class "A" group by the American Medical Association.

The curriculum is arranged to cover all of the laboratory or pre-clinical subjects of the four-year course in medicine and includes, in the last part of the second year, introductory clinical courses which serve to lessen the abruptness of the change from the laboratory to the hospital.

Students who have successfully completed the two-year course are transferred into the third year of American medical colleges of the highest rank from which they receive the degree of doctor of medicine. Sixty percent of those who have attended the school have returned to North Carolina to practise medicine. Approximately twenty-five percent of the physicians now in active practice in North Carolina received the first two years of their medical training here.

The School of Medicine is located on the University campus in close association with all other University activities. The classes are limited to thirty-six students and, since this is a state institution, preferential consideration is given applicants for admission who are citizens of North Carolina.

The students of the Medical School are regularly enrolled in the University, enjoy all the privileges of University students, and are amenable to all general University regulations and to the special regulations of the Medical School.

REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the medical curriculum are three years of college work, which must include a minimum of twelve semester hours in chemistry (including four semester hours of organic chemistry), eight semester hours in biology (at least 4 semester hours being in zoölogy), eight semester hours in physics (which must have required trigonometry as prerequisite), six semester hours in English, and six semester hours in a modern foreign language beyond the amount required in the language chosen for admission to the University. An elementary course in volumetric analysis is desirable. In case of an exceptionally well qualified applicant the prerequisite work in trigonometry for physics may be waived. *No student will be admitted with less than three years of accredited collegiate work, or with a condition on any of the required subjects in science.* All admissions are decided by the Dean of the School of Medicine and a special committee on admissions to the school. The maximum number admitted to the first year class is thirty-six. The Dean and special committee reserve the right to select from the entire list of applicants those who in their judgment are best qualified for the study of medicine.

Admission to Advanced Standing

Candidates for admission to the second year of the medical curriculum must present certificates from an accredited medical school stating that they have had the required fifteen units, at least three years of college work as indicated above, and have completed the subjects of the first year of the medical course as outlined.

BACHELOR OF SCIENCE IN MEDICINE

The University recommends to each applicant that he prepare himself as fully as his age and resources permit. If possible he should first secure a bachelor's degree, either A.B. or S.B., before beginning his professional study. If this is impracticable, he may secure excellent preparation by completing the academic curriculum, outlined below, leading to the degree of Bachelor of Science in Medicine. The degree is conferred upon the completion of the first year of work offered in this school.

NOTE: Students pursuing the academic subjects listed below are hereby notified that the completion of these courses does not necessarily mean admission to our School of Medicine. From the rather long list of applicants are chosen thirty-six who are deemed the most promising material for admission to our School. No arrangement exists for granting the degree of S.B. in Medicine for work in any medical school other than ours. Therefore, in order to secure our S.B. in Medicine, the student must complete the first year of work offered in our School of Medicine and in no other such school. To be eligible for the degree of S.B. in Medicine, at least the last year of pre-medical work must have been done in this institution.

ACADEMIC CURRICULUM FOR S.B. IN MEDICINE

Freshman Year

Chemistry 1-2-3
English 1-2-3
Mathematics 1-2-3
Social Science 1-2-3
*Foreign Language 11-12-13 (French or German)
Hygiene 1-2-3

Sophomore Year

English 21-22-23
*Foreign Language 21-22-23
Botany 41, Zoölogy 41, 42 or
Botany 41, Physics 24-25
Chemistry 31, 42
Elective—one course of 5 or 6 hours

Junior Year

Psychology 21-22-23
Chemistry 61, 62, 63
**Zoölogy 41, 42 or
**Physics 24-25
Elective—two courses of 5 or 6 hours

EXPENSES

The University reserves the right to make, with the approval of the proper authorities, changes in any fees at any time.

Tuition and Other Fees for Each Quarter or Semester

Each student whose *bona fide* residence has not been established in North Carolina for at least the six months immediately prior to his first registration in the University must pay an extra fee of $50.00 for each semester or $33.34 for each fall, winter, or spring quarter he spends in residence. The residence of a minor is that of his parents or guardian. The residence of an adult remains with his parents or guardian unless he shall have independently set up his own.

Bona fide residence means that the student is not in North Carolina primarily to attend the University and that his status as a resident has not been set up merely as a technical bar to the extra charge. Mere ownership of property or payment of taxes apart from residence does not qualify one as a resident nor may a student qualify by living in North Carolina the six months immediately prior to his first registration, unless he continues so to live during the whole period of his stay at the University.

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* The intermediate courses (11-12-13) in French or German or both are to be taken provided the student shows evidence of adequate preparation; otherwise he takes the elementary courses (1-2-3) in the language or languages. The elementary courses, meeting six hours a week, are designed to cover both the elementary and intermediate work. In case both French and German are elected, the requirement is met in three quarters in each language (courses 1-2-3 or 11-12-13); in case only one language is taken, courses 21-22-23 also must be completed, six quarters in all being required.

** The combination chosen here is to be the one not chosen (with Botany 41) in the Sophomore year.

FIRST YEAR

*Tuition and Matriculation	$125.00
Student Publications	3.45
Laundry Deposit	12.75
Student Union fee	1.50
Total for each semester	$142.70

SECOND YEAR

*Tuition and Matriculation	$83.34
Student Publications	2.30
Laundry Deposit	8.50
Student Union fee	1.00
Total for each quarter	$95.14

Each student must provide himself with his own microscope, preferably a new one, of standard manufacture, which must be complete with 16mm, 4mm, and oil immersion objectives and with 5x and 10x eyepieces. If a student desires to use an older type of microscope it must be approved by the Medical School. Students desiring to purchase new microscopes may purchase them from the University at current retail prices, which now range from $120.00 up. In case cash payment cannot be made at time of purchase, information concerning installment payments may be secured by writing the Supervisor of Credits and Collections, Box 150, Chapel Hill.

A deposit of $10 is required at the first registration of the year to cover the cost of materials purchased from the medical store room. Any balance of this deposit left at the end of the college year will be refunded.

SPECIAL NOTICE

An applicant notified of his acceptance must deposit with the Cashier of the University, not later than June 15, the sum of $50.00; otherwise the acceptance will be withdrawn. If the applicant presents himself for registration the deposit will be accredited to his account; otherwise the deposit will be forfeited.

SCHOLARSHIPS

THE WOOD SCHOLARSHIP. (Established in 1895.) Mrs. Mary Sprunt Wood, of Wilmington, has founded a scholarship in memory of her husband, the late Dr. Thomas Fanning Wood.

THE MRS. AUGUSTUS H. JONES SCHOLARSHIP was created in 1930 by Mrs. James H. Parker, of New York City. The recipient

* This fee includes fee for physical education, the library fee, the fee for infirmary service, the fee for debates, the fee for registration costs, and membership fee in the Athletic Association.

of this scholarship is to be designated by Mrs. James H. Parker during her lifetime and thereafter upon the recommendation of the New York Chapter of the United Daughters of the Confederacy. Failing this recommendation from either source, appointment is to be made by the President of the University, preference being given first to relations of the late Dr. James H. Parker, of New York, and second to relations of the donor.

Board

The University Dining Hall Cafeteria is under expert management. Food of excellent quality and variety is served at such prices as will only meet necessary expenses.

Board without room can be obtained in the town from $22.50 to $35.00 a month.

Dormitory Accommodations for Men

Accommodations for approximately fourteen hundred students are available in the University dormitories.

All rooms in the dormitories are completely furnished. Students will, however, provide their own pillows, bed linen (for single beds), blankets, and towels.

Room rent ranges from $5.50 to $15.00 a month for each occupant, the price depending upon the location of the room. This charge includes light, heat, and service. Rooms are leased for the scholastic year.

REGISTRATION

All students are expected to present themselves for registration *Thursday, September 15, 1938,* between the hours of 9 a.m. and 5 p.m., at the place announced in the plan for registration.

First Year Students

Bills for the first semester of the first year are payable at the time of registration in September.

Bills for the second semester are payable at the beginning of the second semester, February first.

Failure to pay or to make proper arrangements for payment results in the assessment of an extra fee of $5.00.

Second Year Students

Bills for the fall quarter are payable at the time of registration. Bills for the winter and spring quarters are payable at the Business office on the first class day of the quarter.

Failure to pay or to make proper arrangements for payment results in the assessment of an extra fee of $5.00.

DELAYED REGISTRATION

The penalty for delayed registration for any quarter is one month of strict attendance probation for each day of delay. Any student registering later than the time appointed for his registration must pay five dollars ($5.00) as an additional fee for delayed registration. No appeal from the imposition of either attendance probation or the late registration charge of five dollars will be granted, unless the delay is due to circumstances clearly beyond the student's control. Such appeals must be made in writing to the Dean of Administration, must show clearly good and sufficient justification for the delay in registering, and must bear the approval of the Dean of the division of the University in which the appellant is enrolled.

THE MEDICAL CURRICULUM

The medical curriculum covers two years of thirty-four weeks each, divided in the first year into two semesters of seventeen weeks and in the second year into three periods, or quarters, of approximately equal length. It is organized into six departments: Anatomy, Bacteriology, Biological Chemistry, Pathology, Pharmacology, Physiology, with additional courses in Physical Diagnosis, Principles of Surgery and Obstetrics, and an affiliated Division of Public Health.

The numbers of hours of instruction in the various subjects in each year are shown below, by semesters for the first year and by quarters for the second year.

First Year

Subject	*Semester I*	*Semester II*	*Total*
Gross anatomy	380		380
Histology	160		160
Embryology	60	30	90
Neuro-anatomy		90	90
Biological Chem.		175	175
Physiology		232	232
Free hours	48	97	145

Second Year

Subject	*Fall*	*Winter*	*Spring*	*Total*
Bacteriology	150			150
Immunology		80		80
Hygiene			30	30
Pharmacology	120	100		220
Pathology	108	90	90	288
Clinical Pathol.		20	60	80
Phys. Diagn.		20	80	100
Surgery			40	40
Obstetrics			10	10
Free hours	90	80	80	250

EXAMINATIONS

The regular examinations in the Medical School are held at the end of the first and second semesters in the first year, and at the end of each quarter in the second year. First year students will be allowed special examinations for the removal of conditions at the end of the second semester, or during the week preceding the beginning of the work of the second year.

An examination will not be allowed a student who is charged with ten per cent. of unexcused absences, or with absences amounting to twenty per cent. of the total number of hours assigned the subject.

PROMOTIONS

If a first year student makes a grade of F on any subject, or a grade of E with failure to remove it by subsequent examination, he will be required to withdraw from the school. Two grades of E debar the student from examinations to remove these conditions. A first-year student who has been dropped from the Medical School and has returned to college and done creditable work for three quarters may be considered for readmission to the first-year class.

If the student is a candidate for S.B. in Medicine and makes a grade of E in the second semester of the first year he is not allowed to take a special examination for the removal of the E earlier than thirty days after the last examination in that period of examinations.

If a second-year student makes a grade of E on any subject he may be given another examination on that subject at any subsequent examination period or during the following month of July.

No student shall be allowed a reëxamination on more than one major subject. If he makes an F on any major subject he shall not be allowed a reëxamination on any subject. He may be allowed to repeat the second year with the consent of the faculty.

"The faculty further reserves the right to drop a student from the school at the end of either semester of the first year, or any quarter of the second year, providing he does not in their judgment show sufficient promise to justify their allowing him to continue the study of medicine,—irrespective of whether he may or may not have had a passing grade on each individual course."

COURSES OF INSTRUCTION

Certain courses in the curriculum of the School of Medicine are approved by the Graduate School as minors for the master's and doctor's degrees. For details see Catalogue of the Graduate School.

For statement of hours of instruction in the various subjects see p. 11.

DEPARTMENT OF ANATOMY

CHARLES STAPLES MANGUM, A.B., M.D., *Professor of Anatomy.*
WESLEY CRITZ GEORGE, Ph.D., *Professor of Histology and Embryology.*
WARNER SMITH HAMMOND, Ph.D., *Instructor in Anatomy.*
FRANK NORMAN LOW, Ph.D., *Instructor in Anatomy.*
MRS. MARTIN S. SHOCKLEY, A.B., *Technician.*

The courses include gross and microscopic anatomy, embryology, the topography of the body, the application and relation of anatomy to medicine and surgery, and the anatomy of the central nervous system and the organs of special sense.

1. GROSS ANATOMY.

The student dissects the human body under the supervision and direction of an instructor. Laboratory talks, demonstrations, and conferences take the place of lectures. Practical examinations are held on the cadaver. The subject matter is presented from the standpoint of development and function, and special emphasis is placed upon the relationship of surface and regional anatomy to medical and surgical diagnosis. Each student is provided with a complete set of disarticulated bones which he is required to demonstrate. Professor Mangum; Dr. Low.

101. CENTRAL NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.

A special laboratory study of the gross and microscopic anatomy of the cord and brain. Each student is provided with prepared dissections of the human brain and a series of sections through the cord and the brain stem. A human brain is then given to each group of six men and by them dissected in order to correlate and systematize the principal points of emphasis. A practical examination tests the student's ability to locate the various tracts and nuclei. Professor Mangum, Dr. Hammond, Dr. Low. See Catalogue of the Graduate School.

102. GENERAL HISTOLOGY AND ORGANOLOGY.

This course includes a study of the structure and activities of the animal cell, the histology and development of the tissues, and the microscopic structure of all the organs of the body except the central nervous system, which is studied in course 101. The work is based principally upon stained sections supplemented by demonstrations of gross organs from the cadaver and of preparations of living material. Considerable experience is given in the identification of sections from the various tissues and organs. *One hundred sixty hours of lecture and laboratory work in the first year.* Professor George; Dr. Hammond.

103. EMBRYOLOGY.

This course covers: (a) The fundamental facts of early development of the vertebrate body, with laboratory study based principally upon whole mounts and serial sections of chick embryos; and (b) The development of body form, organ systems, some individual organs, and the fetal membranes of mammals. Students are supplied with serial sections of pig embryos. Serial sections of human fetuses from 2½ mm. to 27 mm. and a synoptic collection of whole human fetuses representing approximately every week of the gestation period are available for demonstration and study. *Ninety hours of lecture and laboratory work in the first year.* Professor George; Dr. Hammond.

104. CYTOLOGY AND HISTOGENESIS.

Those who have completed course 102 or its equivalent will be offered an opportunity to pursue further work in cytology and histogenesis. Arrangements for this course may be made with the instructor. Professor George; Dr. Hammond.

106. ADVANCED NEURO-ANATOMY. Credit in the Graduate School: 1 course. Prerequisite: Neuro-Anatomy.

The brain stem, basal ganglia, and the principal neuron pathways are modelled in plastic clay. Microscopic sections, photographs, and dissections of human brain are used as guides. Special emphasis is placed upon the function of the central nervous system. *Five lecture and nine laboratory hours a week, spring quarter.* Offered in alternate years. Not offered in 1938.

108. APPLIED ANATOMY. Elective for second year medical students:

Laboratory talks are supplemented by demonstrations on the cadaver. Actual application of the methods of applied anatomy is accomplished by selected exercises and dissections involving analysis of anatomical problems. *Three hours a week, spring quarter.* Dr. Low.

DEPARTMENT OF BACTERIOLOGY

DANIEL ALLAN MACPHERSON, Sc.M., Ph.D., *Professor of Bacteriology.*
MEYER H. ROLNICK, A.B., M.S., *Student Assistant.*
BERNARD JOHN SCHAAF, *Senior Technician.*

51. ELEMENTARY BACTERIOLOGY. Prerequisite, General Chemistry and one course in Botany or Zoölogy. *Elective.

A lecture and laboratory course offered as a general science course. The fundamental principles of bacteriology are emphasized, and the student is trained in general bacteriological technique. The morphological and biological characteristics of the molds, yeasts, and saprophytic bacteria are studied. Pure cultures are isolated from air and water, and identification attempted. The applications of bacteriology to agriculture, industry, and the home are considered. (Registration of a minimum of six students required.) *Nine hours a week (lectures and laboratory), spring quarter. Laboratory fee, $4.00.* Professor MacPherson; Mr. Rolnick.

53. PUBLIC HEALTH LABORATORY METHODS. Prerequisite, Bacteriology 164 or its equivalent. *Elective.

A course of training in the modern bacteriological methods employed in the routine work of a public health laboratory. Practice is afforded in the laboratory diagnosis of diphtheria, tuberculosis, typhoid fever, pneumonia, malaria, gonorrhea, syphilis, and rabies. The bacteriological examination of water, milk, and canned goods is also practised. The course is designed for medical students and those wishing to qualify as bacteriological laboratory technicians. *Six hours a week, spring quarter. Laboratory fee for non-medical students, $6.00.* Professor MacPherson.

164. PATHOGENIC BACTERIOLOGY. Required of medical students. Prerequisite, for academic students, General Chemistry, Chemistry 31, and Bacteriology 51, or equivalent. *Elective.

The early weeks of the course are devoted to a thorough grounding in the fundamental principles of bacteriology. Each student prepares the various culture media in common use; cultivates and describes several non-pathogens from stock cultures; and practises the more useful staining methods. Pure cultures are isolated from air and water and their biology studied. The major portion of the course is devoted to the detailed study of the pathogens. Unknown mixtures are used to test the student's ability to differentiate organisms of the various groups. Practical applications of bacteriology in the diagnosis of disease are stressed by the examinations of sputa, pus, feces, and blood. Animal inoculations are made to demonstrate the process of infection and the differentiation of certain organisms. Lectures cover all the more important diseases. *Laboratory fee for non-medical students, $6.00.* Professor MacPherson; Mr. Rolnick. See Catalogue of the Graduate School.

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*Before registering for this course the academic student must secure the permission of his Dean. Bacteriology 51 is not a part of the medical curriculum.

165. INFECTION, IMMUNITY, AND SERUM DIAGNOSIS. Required of medical students. Prerequisite, Bacteriology 164 or its equivalent. *Elective.

The early laboratory work is designed to demonstrate the basic principles of immunology and serology. Practical training is given in the production and use of agglutinins, precipitins, lysins, and complement fixing antibodies. Vaccines are prepared, and their use demonstrated. The preparation and standardization of antimicrobic and antitoxic sera are studied. Anaphylaxis and allergy are produced in animals, and methods of diagnosis and desensitization practised. The student is required to prepare his own materials and to inject and bleed animals himself. Special attention is given to the use of these principles in the diagnosis of blood stains, blood grouping, typhoid fever, typhus fever, diphtheria, tuberculosis, hay fever, gonorrhea, and syphilis. Unknown specimens test the student's ability to use the reactions. Lectures consider the principles of infection, immunity, and resistance. *Laboratory fee for non-medical students, $10.00.* Professor MacPherson; Mr. Rolnick. See Catalogue of the Graduate School.

166. PUBLIC HEALTH AND HYGIENE. Prerequisite, Bacteriology 164. *Elective.

Lectures and quizzes on the sources, mode of spread, and control of communicable diseases; ventilation; water and sewage purification; soil pollution; hygiene of foods; carriers; and insect vectors. Professor MacPherson.

167. ADVANCED BACTERIOLOGY. Prerequisite, Bacteriology 164 or its equivalent. *Elective.

Opportunity and facilities are offered to qualified students to pursue advanced work in bacteriology and immunology. *Hours arranged.* Professor MacPherson.

DEPARTMENT OF BIOLOGICAL CHEMISTRY

JAMES CLARENCE ANDREWS, B.S., Ph.D., *Professor of Biological Chemistry.*
GRANVIL CHARLES KYKER, B.S., *Instructor in Biochemistry.*
THOMAS WORTH CROWELL, A.B., *Student Assistant in Biochemistry.*

101. FOOD CHEMISTRY (6).

A course intended to familiarize the student with the composition and analysis of foods and the principles of dietetics. Fall quarter. Professor Andrews; Mr. Kyker.

102-103 (104-105). GENERAL BIOLOGICAL CHEMISTRY.

A class and laboratory course covering the fundamental principles and methods of biological chemistry. The laboratory work includes rather complete analysis of blood and urine and metabolic studies as illustrated by changes in urinary composition. Professor Andrews; Mr. Kyker.

201-202-203. ADVANCED BIOLOGICAL CHEMISTRY (6 each).

A study of special phases of the subject including seminar, class room, and laboratory work. Professor Andrews.

301-302-303. RESEARCH IN BIOLOGICAL CHEMISTRY (6 or more each).

Intended for applicants for advanced degrees. Professor Andrews.

NOTE: These courses are described in more detail in the Graduate Catalog.

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* Before registering for this course the academic student must secure the permission of his Dean.

DEPARTMENT OF PATHOLOGY

JAMES BELL BULLITT, A.M., M.D., *Professor of Pathology.*
RUSSELL LOWELL HOLMAN, A.B., M.D., *Assistant Professor of Pathology.*
THOMAS HENDERSON BYRNES, B.S., M.D., *Instructor in Pathology.*
JOHN GILMER MEBANE, A.B., *Student Research Assistant in Pathology.*
MISS MITTIE PICKARD, *Senior Technician.*

51. CLINICAL PATHOLOGY.

The object of this course is to familiarize the student with routine examinations of the blood, urine, feces, gastro-intestinal contents, sputum, transudates, and exudates; to acquire accuracy in such procedures; and to secure a general understanding of their relation to the diagnosis of disease. Material to be examined consists of preserved specimens and fresh specimens from Watts Hospital (Durham). Opportunity is also afforded for the study of patients with special reference to the laboratory examinations indicated and for the correlation of the findings. Doctor Byrnes.

161. PATHOLOGY.

Embraces a consideration of general and special pathology from the chemical and physiological as well as the morphological aspects. Lectures and recitations are combined with laboratory work in a study of both gross and microscopical preparations. Each student is supplied with a set of "loan" sections (about 200) which form the basis of the study. This is supplemented by the use of a considerable number of special demonstration sections. A series of practical examinations is held, in which each student is required to diagnose the process and describe the salient features in about fifty "unknown" sections. A series of several hundred preserved pathological specimens, selected to illustrate many of the common and some of the uncommon pathological processes, is arranged on open shelves in the laboratory. These are studied in conjunction with the microscopical work. The class is divided into small sections which rotate in attending the autopsies at Watts Hospital (Durham). Each student is required to write his own protocol of each autopsy which he observes. Professor Bullitt; Doctor Byrnes. See Catalogue of the Graduate School.

162. ELECTIVE COURSES.

a. Surgical Pathology (prerequisite, Pathology 161); a detailed study of surgical material, with special reference to tumors.

b. Gross Pathology (prerequisite, Pathology 161); a study of the findings in necropsied cases, designed to help the student correlate pathological processes. The clinical and laboratory data as well as the microscopical slides are available in most of the cases.

c. Experimental Pathology; production of various inflammatory lesions and other pathological processes, edema, hemorrhage, ischemia, jaundice, urinary obstruction, etc.) and study of their development.

d. Research in Pathology.

Hours and credits for these courses to be arranged.

DEPARTMENT OF PHARMACOLOGY

WILLIAM DEBERNIERE MACNIDER, M.D., *Kenan Research Professor of Pharmacology.*
GRANT LESTER DONNELLY, A.B. in Educ., M.D., *Associate Professor of Pharmacology.*
FRED RICHARD COCHRANE, JR., *Technical Assistant.*

171. PHARMACOLOGY AND MATERIA MEDICA.

This course covers two quarters in the second year of the medical curriculum. The character of the work permits a division of the course into three parts: (a) A consideration of the ways in which drugs may affect the organism. This introduction embraces a discussion of the

various physico-chemical forces influencing drug activity, and the modification of the action of these conditions in different pathological states of the organism, such, for instance, as febrile conditions and various metabolic disturbances. (b) A general study of the pharmacology of the important drugs. The drugs are considered in groups depending upon their predominant effect in the body. The student learns the preparation, their dose, physiological incompatibilities, and considers in detail the way in which the drugs act as pharmacological agents. The symptoms and treatment of poisoning are considered following the discussion of the pharmacology of the group. (c) A consideration of the pharmacology of the drugs in the pathological animal, with a discussion of the modification of drug activity in various pathological states. In conjunction with this study emphasis is given to the use of drugs as therapeutic agents and a study is made employing such remedies as are indicated in the form of a prescription. Students are required to write prescriptions, which are then subjected to the criticism of various members of the class and the instructor. Professors MacNider, Donnelly.

172. LABORATORY WORK IN PHARMACOLOGY.

This part of the general course in pharmacology consists in a careful and accurate study of the action of practically all of the more important drugs on animals. For this work, the higher animals, such as the cat and dog, are chiefly used. The class is divided into groups of two or four, and the experimental work is conducted by the student. Each student is required to hand in to the instructor at the completion of the course a laboratory notebook containing a detailed account of each experiment, an explanation of the results obtained, and the tracings made during the experiment. Oral and written recitations are frequently held. Professors MacNider, Donnelly. See Catalogue of the Graduate School.

173. ADVANCED PHARMACOLOGY.

Two types of courses will be offered: (a) an experimental study of the action of various drugs upon the normal animal; (b) an experimental study of the action of various drugs and other agencies upon the pathological animal. *Hours by arrangement.* Professor MacNider.

DEPARTMENT OF PHYSIOLOGY

ISAAC HALL MANNING, M.D., *Professor of Physiology.*
H. WARD FERRILL, A.B., Ph.D., *Associate Professor of Physiology.*
WOODROW WILSON JERVIS, *Technical Assistant.*

51. PHYSIOLOGY.

The course takes up the study of Circulation, Respiration, Digestion, Metabolism, and Nutrition. These systems are discussed in lectures and the material supplemented by the laboratory work. In the laboratory, frogs and turtles are used by the students and demonstrations are carried out on dogs, cats, and rabbits by the instructor with the aid of the students. In this way the student is made acquainted with the actual functions of the body and how each part or system is related and affected by every other system. Lectures, 11:00-12:00—Mon., Wed., Fri. Laboratory, 11:00-1:00—Tues., Thurs.

Prerequisite, elementary chemistry, zoölogy, and physics, but with the consent of the instructor one of these subjects may be omitted. Professor Ferrill.

141. PHYSIOLOGY.

A lecture course the second semester, in which the functions of the systems of organs are explained and discussed as fully as time permits. The subjects include the digestion, the circulation, respiration, elimination, metabolism, the internal secretions, heat regulation, the nervous system, and the special senses. Attention is called to pathological conditions which are commonly associated with disturbed functions and which emphasize the importance of normal function. Professor Manning. See Catalogue of the Graduate School.

142. EXPERIMENTAL PHYSIOLOGY.

A laboratory course during the second semester, first year. In this course the student learns the use of physiological apparatus; studies the neuro-muscular system and heart on the frog and turtle; the vascular and respiratory systems on the rabbit and dog; and performs a limited number of experiments on the human, including experiments on circulation, respiration, basal metabolism, and special senses. Professor Ferrill. See Catalogue of the Graduate School.

ADDITIONAL COURSES

61. PHYSICAL DIAGNOSIS.

A course in the method of history taking and physical examination with lectures, demonstrations, and practical exercises.

At the beginning emphasis is placed on the physical signs in the normal subject. The class is divided into groups for practical exercises on and demonstrations of the clinical material in the University Infirmary, in the wards and out-patient department of Watts Hospital (Durham), of the State Tubercular Sanatorium, of the State Hospital in Raleigh, and in the outpatient department of the MacPherson Eye, Ear, Nose, and Throat Hospital, in Durham. Each student has twenty-five practical exercises of three hours each. *Winter and spring quarters, second year.* Professor Berryhill; Drs. Morgan, Hedgpeth.

62. VOLUNTARY COURSE. Clinical pathological conference, Watts Hospital. Wednesdays, 2 to 4 P.M. Spring Quarter. Professor Berryhill; Dr. Byrnes.

NOTE: The charity wards and out-patient department of Watts Hospital (220 beds) are available to the medical school for teaching purposes. These facilities provide clinical material for the courses in Physical Diagnosis and Clinical Pathology, and afford opportunity for attendance upon autopsies and the study of fresh pathological specimens.

63. INTRODUCTION TO OBSTETRICS.

This course is of an introductory nature, following the general ideas incorporated in the physical diagnosis course and emphasizing those factors that have special importance in obstetric diagnosis. The subjects covered in the ten lectures will be anatomy of the female pelvis; menstruation and ovulation, conception, placentation; embryology, the diagnosis and course of pregnancy, mechanism of labor (briefly) and post partum course. The purpose is to familiarize the student with obstetric terminology and processes and to impress the possibility of normal obstetrics. Dr. Ross.

64. PRINCIPLES OF SURGERY.

A course consisting of lectures, laboratory demonstrations, and demonstrations in the Surgical Dispensary of Watts Hospital in Durham in which the fundamental processes of physiology and pathology as applied to surgery are studied. Such subjects as wound healing, infection, asepsis, and antisepsis are considered. Practical demonstrations in the various methods of sterilizing the hands, instruments, dressings, and instruction in the methods of applying the usual surgical dressings are given. The object of the course is to prepare the students for the beginning of their clinical training. Doctor Hedgpeth.

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GENERAL STATEMENT

The University of North Carolina has established a Division of Public Health and offers courses of study to supplement the basic work in this field, in order that immediate and practical needs of trained personnel in this state and region may be adequately met. This service is made possible through the coördination of the facilities and the staffs of the Schools of Medicine and Engineering of the University and the North Carolina State Board of Health, the three agencies of the state which are concerned with the problems of public health.

The curriculum covers a period of sixteen weeks and includes both intra-mural instruction and field work. The courses offered are those best adapted to equip a physician for the special responsibilities of a health officer and those which may be covered within a short period of intensive study.

The students in the Division of Public Health are enrolled in the University of North Carolina and enjoy all the rights and privileges of the general student body. Upon completion of the course a certificate of credit is awarded by the University and this is endorsed by the North Carolina State Board of Health.

The United States Public Health Service has designated the University of North Carolina as the teaching unit in public health for Interstate Sanitary District No. 2, comprising the States of Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, and the District of Columbia. For more detailed information see the special bulletin of the Division of Public Health.